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Re: Haggar et al., *Technique for Efficient Data Transfer Within a Virtual Network*, Serial No. 09/841,136, Filed April 24, 2001

Regarding the above-identified application, attached are the following documents:

1. Transmittal of Appeal Brief; and
2. Appellants' Brief on Appeal Under 37 C.F.R. §41.37.

CERTIFICATION OF FACSIMILE TRANSMISSION
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Attorney's Docket No. RSW920010029US1

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Hagggar et al.

Group Art Unit: 2143

Serial No.: 09/841,136

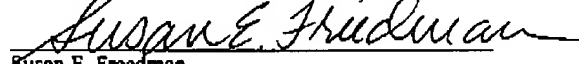
Examiner: Asghar H. Bilgrami

Filed: April 24, 2001

Confirmation No.: 6044

For: TECHNIQUE FOR EFFICIENT DATA TRANSFER WITHIN A VIRTUAL
NETWORK

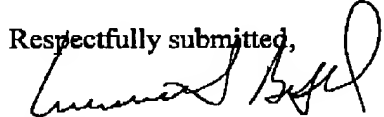
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number 577-273-8300 on December 8, 2005.
Susan E. Freedman
Date of Signature: December 8, 2005TRANSMITTAL OF APPEAL BRIEF
(PATENT APPLICATION--37 C.F.R. § 41.37)1. Transmitted herewith is the "Appellants' Brief on Appeal Under 37 C.F.R. §41.37" for
the above-identified application, pursuant to the Notice of Appeal filed on October 10, 2005.2. This application is filed on behalf of
☐ a small entity.
☒ other than a small entity.3. Pursuant to 37 C.F.R. § 41.20(b)(2), the fee for filing the Appeal Brief is:
☐ small entity \$250.00
☒ other than small entity \$500.00

Appeal Brief fee due \$500.00

☒ This and any additional fee or refund may be charged to IBM Deposit
Account 09-0461.

Respectfully submitted,


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PATENT

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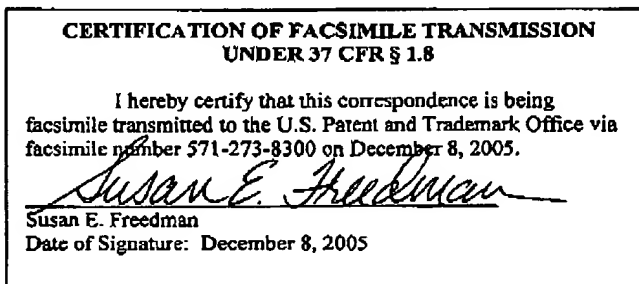
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APPELLANTS' BRIEF ON APPEAL UNDER 37 C.F.R. §41.37

Sir:

This Appeal Brief is filed pursuant to the "Notice of Appeal to the Board of Patent Appeals and Interferences" mailed October 10, 2005.

Real Party In Interest

The real party in interest is assignee International Business Machines Corporation, Armonk, New York.

Related Appeals and Interferences

Appellants are aware of no appeals or interferences that would be affected by the present appeal.

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Status of Claims

Appellants appeal the final rejection of Claims 1-24, which as of the filing date of this Brief, remain under consideration. The attached Appendix A presents the claims at issue as finally rejected in the Final Office Action of July 14, 2005 (hereinafter "Final Office Action") and the Advisory Action of September 19, 2005 (hereinafter "Advisory Action").

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Status of Amendments

The attached Appendix A presents the pending claims and each of the pending claims' corresponding status. All amendments in the present case have been entered.

Summary of the Claimed Subject Matter

The present application includes rejected independent Claims 1, 5, 8, 11, 14 and 17. Independent Claims 1, 8 and 14 are method, system and computer program product analogs of one another. Independent Claims 5, 11 and 17 also are method, system and computer program product analogs of one another. Accordingly, only independent method Claims 1 and 5 will be analyzed.

Independent Claim 1 is directed to a method of transmitting data in a virtual network (Specification Figure 1) comprising three steps. The first step is allocating one or more outbound backing buffers for each of a plurality of particular network addresses. This allocating is described, for example, in Blocks 250, 260 and 265 of Figure 2, and in the accompanying description in the specification at Page 12, lines 10-20. The second step is packing outbound data packets into appropriate ones of the outbound packing buffers according to a network address within a header of each outbound data packet. This packing is illustrated, for example, at Blocks 230, 235, 240 and 245 of Figure 2, and in the accompanying description in the specification at Page 13, lines 1-11. The last step is transmitting each outbound packing buffer into the virtual network in a single transmission operation. This transmitting is illustrated, for example, at Block 210 of Figure 2 and in the accompanying description in the specification at Page 15, lines 1-6.

Independent method Claim 5 is also directed to a method of transferring data in a virtual network comprising three steps. In the first step, one or more outbound packing buffers is allocated for each of a plurality of first network addresses, wherein each outbound packing buffer is logically divided into a plurality of frames, the frames being associated with second network addresses. This allocating is described, for example, in Figure 3, at Blocks 350, 360, 365 and 370, and in the accompanying description in the specification at Page 15, line 7-Page 16, line 6. The second step is packing outbound data packets into selected frames of selected ones of outbound packing buffers, when a header of the outbound data packet to be packed specifies the first network address and the second network address which

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correspond to the selected outbound packing buffer and the selected frame. This packing is described, for example, at Blocks 330-345 of Figure 3, and the accompanying portion of the specification at Page 15, line 7-Page 16, line 6. Finally, the last step is transmitting each outbound packing buffer onto the virtual network in a single transmission operation. This transmitting is described, for example, at Block 310 of Figure 3, and the accompanying description at Page 15, line 7-Page 16, line 6.

Grounds of Rejection To Be Reviewed on Appeal

Independent Claims 1, 5, 8 and 11 and dependent Claims 2, 3, 6, 7, 9, 12 and 13 stand rejected under 35 USC §102(b) as being unpatentable over U.S. Patent 4,872,159 to Hemmady et al. ("Hemmady"). Independent Claims 14 and 17 and dependent Claims 15, 16, 18 and 19 stand rejected under 35 USC §103(a) over Hemmady.

Argument

I. Independent Claims 1, 5, 8 And 11 and Dependent Claims 2, 3, 6, 7, 9, 12 and 13 Are Not Anticipated Under 35 USC §102(b)

As noted above, independent Claims 1, 5, 8 and 11 and dependent Claims 2, 3, 6, 7, 9, 12 and 13 stand rejected under 35 USC §102(b) as being anticipated by Hemmady.

A. Introduction to 35 USC §102(b) Analysis

Appellants wish to note that anticipation requires that each and every element of the claim is found in a single prior art reference. *W. L. Gore & Associates Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1554, 220 U.S.P.Q. 303, 313 (Fed. Cir. 1983). Stated another way, all material elements of a claim must be found in one prior art source. *In re Marshall*, 198 U.S.P.Q. 344 (C.C.P.A. 1978). "Anticipation under 35 U.S.C. § 102 requires the disclosure in a single piece of prior art of each and every limitation of a claimed invention." *Apple Computer Inc. v. Articulate Systems Inc.* 57 USPQ2d 1057, 1061 (Fed. Cir. 2000). A finding of anticipation further requires that there must be no difference between the claimed invention and the disclosure of the cited reference as viewed by one of ordinary skill in the art. *See Scripps Clinic & Research Foundation v. Genentech Inc.*, 927 F.2d 1565, 1576, 18 U.S.P.Q. 2d 1001, 1010 (Fed. Cir. 1991). Additionally, the cited prior art reference must be enabling, thereby placing the allegedly disclosed matter in the possession of the public. *In re*

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Brown, 329 F.2d 1006, 1011, 141 U.S.P.Q. 245, 249 (C.C.P.A. 1964). Thus, the prior art reference must adequately describe the claimed invention so that a person of ordinary skill in the art could make and use the invention.

B. Independent Claims 1 and 8 Are Patentable Over Hemmady

Independent Claim 1 recites:

Claim 1 recites:

1. A method of transferring data in a virtual network, comprising:
 - allocating one or more outbound packing buffers for each of a plurality of particular network addresses;
 - packing outbound data packets into appropriate ones of the outbound packing buffers, according to a network address within a header of each outbound data packet; and
 - transmitting each outbound packing buffer onto the virtual network in a single transmission operation. (Emphasis added.)

Claim 1 was rejected under 35 USC §102(b) as being anticipated by Figure 4 of Hemmady et al. and the accompanying description. Figure 4 of Hemmady et al. is illustrated below:

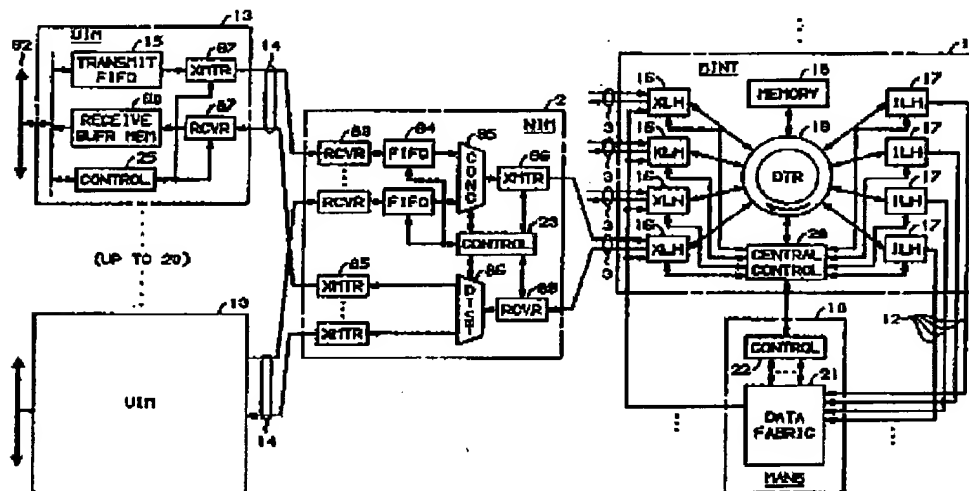


FIG. 4

Assume, for the sake of argument, that Figure 4 of Hemmady et al. illustrates a virtual network. The individual users are shown on the left as user interface modules (UIM) 13, and the network is shown on the right as a memory and interface module (MINT) 11 and a metropolitan area network switch (MANS) 10. Also, assume that the outward packing

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buffers are the FIFO registers 94 in the middle of the Figure. Even if all of these assumptions are made, it is clear from Figure 4 of Hemmady et al. that each FIFO 94 corresponds to a different user interface model (UIM) 13, as shown by the arrows 14 that connect the respective UIM to the respective FIFO 94. Thus, the FIFOs correspond to a particular user. The FIFOs are not allocated for each of a plurality of particular network addresses as recited in Claim 1, because the network addresses of Figure 4 of Hemmady et al. would correspond to the memory and interface module (MINT) 11 and/or the metropolitan area network switch (MANS) 10. Similarly, the arrows 14 between the UIM 13 and the FIFOs 94 also teach away from the recitation in Claim 1 of "packing outbound data packets into appropriate ones of the outbound packing buffers according to a network address within a header of each outbound data packet." Rather in Hemmady et al., the outbound data packets are packed based on the sending user. For at least these reasons, Hemmady et al. does not anticipate, and, in fact, teaches away from, the above-quoted recitations of Claim 1.

The Advisory Action states that Appellants' arguments are not persuasive "because the UIM is network interface..., which requires network [sic] address for communication with other device in a network, thereby network address is inherent". Even if this is so, the packing that is performed in Figure 4 of Hemmady et al. relates to the originating user interface module 13, not to a particular network address for an outbound data packet. For at least these additional reasons, the recitations of independent Claim 1 are not found in Hemmady et al. and, indeed, Hemmady et al. teaches away from the above-quoted recitations of Claim 1. Similar analysis applies to analogous independent system Claim 8.

C. Independent Claims 5 and 11 Are Patentable Over Hemmady

Independent Claim 5 recites:

5. A method of transferring data in a virtual network, comprising:

allocating one or more outbound packing buffers for each of a plurality of first network addresses, wherein each outbound packing buffer is logically divided into a plurality of frames, the frames being associated with second network addresses;

packing outbound data packets into selected frames of selected ones of the outbound packing buffers, when a header of the outbound data packet to be packed specifies the first network address and the second network address which correspond to the selected outbound packing buffer and the selected frame; and

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transmitting each outbound packing buffer onto the virtual network in a single transmission operation. (Emphasis added.)

Independent Claim 5 is patentable for the same reasons that were described above in connection with Claim 1. Moreover, independent Claim 5 is independently patentable because the Final Office Action has not indicated any passages of Hemmady that describe these two network addresses, nor would these two addresses be inherent. Similar analysis applies to analogous independent system Claim 11.

D. Dependent Claims 2, 3, 6, 7, 9, 12 and 13 Are Independently Patentable

Dependent Claims 2, 3, 6, 7, 9, 12 and 13 are patentable at least by virtue of the patentability of the independent claims from which they depend. Moreover, these dependent claims are separately patentable. Two classes of dependent claims will now be analyzed:

i. Claims 2, 3, 6, 9, and 12 Are Independently Patentable

Dependent Claims 2, 3, 6, 9 and 12 recite, in part, that the particular network address of the independent claim is a next hop address on the virtual network. Assuming, for the sake of argument, that a particular network address is inherent in a transmission from a user interface module 13, Hemmady does not describe that the network address should be a "next-hop address on a virtual network", as recited in Claims 2, 3, 6, 9 and 12 as opposed to one of many other addresses on a virtual network. Accordingly, these claims are independently patentable.

ii. Dependent Claims 7 and 13 Are Independently Patentable

Dependent Claim 7 recites:

7. The method according to Claim 5, further comprising:

receiving a set of frames from the transmitting each outbound packing buffer onto the virtual network in a single transmission operation; and

determining whether to forward the outbound data packets which are packed in each frame by inspecting a first packet of the frame. (Emphasis added.)

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Analogous recitations are found in Claim 13. Neither the Final Office Action nor the Advisory Action appears to point to any description or suggestion in Hemmady of the above-underlined recitations. Accordingly, these claims are independently patentable.

iii. The Dependent Claims Should Be Considered Separately In This Appeal

Appellants wish to note that the Advisory Action states, in part:

...Further argument in the dependent claims would not place application in the allowable condition, without including in their parent claims. If applicant believes that the limitation is allowable, examiner suggests that applicant should place in their parent claims at the time of filing continuation. The prosecution is closed.

Appellants respectfully submit that each of the dependent claims needs to be examined separately for patentability pursuant to 35 USC §112, paragraph 4. There is no need for a dependent claim to be written in independent form for it to be considered. Accordingly, Appellants respectfully request the Board of Appeals and Interferences to separately consider patentability of the dependent claims, because this apparently has not been done, despite Appellants' request.

II. Claims 14-19 Are Patentable Under 35 USC §103(a) Over Hemmady

Claims 14-19 stand rejected under 35 USC §103(a) as being unpatentable over Hemmady.

A. Introduction to §103 Analysis

A determination under §103 that an invention would have been obvious to someone of ordinary skill in the art is a conclusion of law based on fact. *Panduit Corp. v. Dennison Mfg. Co.* 810 F.2d 1593, 1 U.S.P.Q.2d 1593 (Fed. Cir. 1987), *cert. denied*, 107 S.Ct. 2187. After the involved facts are determined, the decision maker must then make the legal determination of whether the claimed invention as a whole would have been obvious to a person having ordinary skill in the art at the time the invention was unknown, and just before it was made. *Id.* at 1596. The United States Patent and Trademark Office (USPTO) has the

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initial burden under §103 to establish a *prima facie* case of obviousness. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988).

To establish a *prima facie* case of obviousness, the prior art reference or references when combined must teach or suggest *all* the recitations of the claims, and there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. M.P.E.P. §2143. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. M.P.E.P. §2143.01, citing *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990). As emphasized by the Court of Appeals for the Federal Circuit, to support combining references, evidence of a suggestion, teaching, or motivation to combine must be **clear and particular**, and this requirement for clear and particular evidence is not met by broad and conclusory statements about the teachings of references. *In re Dembiczak*, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). In another decision, the Court of Appeals for the Federal Circuit has stated that, to support combining or modifying references, there must be **particular** evidence from the prior art as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed. *In re Kotzab*, 55 U.S.P.Q.2d 1313, 1317 (Fed. Cir. 2000).

B. Independent Claims 14 and 17 Are Patentable Over Hemmady

Independent Claims 14 and 17 are computer program product analogs of independent Claims 1 and 8, and independent Claims 5 and 11, respectively. These claims are patentable at least per the patentability of these independent claims as analyzed above. Moreover, Appellants respectfully submit that since Hemmady teaches away from the recitations of these claims as described above, there is no evidence of a teaching, suggestion or motivation in Hemmady to modify Hemmady to provide the claim recitations. For at least these reasons, independent Claims 14 and 17 are unobvious over Hemmady.

C. Dependent Claims 15, 16, 18 and 19 Are Patentable Over Hemmady

These dependent claims are patentable at least per the patentability of the independent claims from which they depend. Moreover, dependent Claims 15 and 18 are independently

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patentable for at least the same reasons that were described above in connection with Claims 2, 3, 6, 9 and 12. This analysis will not be repeated for the sake of brevity. Finally, Appellants respectfully request the Board of Appeals and Interferences to consider the patentability of these claims even though they are still in dependent form, for the reasons that were described above.

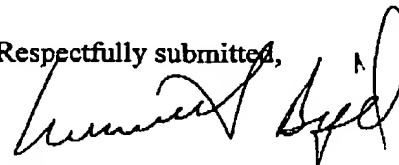
The remaining dependent Claims 4, 10 and 20-24 are submitted as being patentable at least by virtue of the independent claims from which they depend and are not being analyzed separately herein.

Conclusion

In summary, Appellants respectfully submit that the cited reference does not teach or suggest all of the recitations of the independent claims, and that many of the dependent claims are also independently patentable. Accordingly, Appellants request reversal of the rejections of the claims, allowance of the claims and passing of the application to issue.

It is not believed that an extension of time and/or additional fee(s) are required, beyond those that may otherwise be provided for in documents accompanying this paper. In the event, however, that an extension of time is necessary to allow consideration of this paper, such an extension is hereby petitioned for under 37 C.F.R. §1.136(a). Any additional fees believed to be due in connection with this paper may be charged to Deposit Account No. 09-0461.

Respectfully submitted,



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APPENDIX A – CLAIMS APPENDIX

1. (Previously Presented) A method of transferring data in a virtual network, comprising:
 - allocating one or more outbound packing buffers for each of a plurality of particular network addresses;
 - packing outbound data packets into appropriate ones of the outbound packing buffers, according to a network address within a header of each outbound data packet; and
 - transmitting each outbound packing buffer onto the virtual network in a single transmission operation.
2. (Original) The method according to Claim 1, wherein each of the particular network addresses is a next-hop address on the virtual network.
3. (Original) The method according to Claim 1, wherein the network address within the header is a next-hop address inserted into the header by a sending host.
4. (Original) The method according to Claim 1, wherein the virtual network is defined by a plurality of logical partitions within a single computing device.
5. (Previously Presented) A method of transferring data in a virtual network, comprising:
 - allocating one or more outbound packing buffers for each of a plurality of first network addresses, wherein each outbound packing buffer is logically divided into a plurality of frames, the frames being associated with second network addresses;
 - packing outbound data packets into selected frames of selected ones of the outbound packing buffers, when a header of the outbound data packet to be packed specifies the first network address and the second network address which correspond to the selected outbound packing buffer and the selected frame; and
 - transmitting each outbound packing buffer onto the virtual network in a single transmission operation.

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6. (Original) The method according to Claim 5, wherein the first network address comprises a next-hop address on the virtual network and the second network address comprises a final destination address.

7. (Previously Presented) The method according to Claim 5, further comprising:
receiving a set of frames from the transmitting each outbound packing buffer onto the virtual network in a single transmission operation; and
determining whether to forward the outbound data packets which are packed in each frame by inspecting a first packet of the frame.

8. (Previously Presented) A system for transferring data in a virtual network, comprising:
means for allocating one or more outbound packing buffers for each of a plurality of particular network addresses;
means for packing outbound data packets into appropriate ones of the outbound packing buffers, according to a network address within a header of each outbound data packet; and
means for transmitting each outbound packing buffer onto the virtual network in a single transmission operation.

9. (Original) The system according to Claim 8, wherein each of the particular network addresses is a next-hop address on the virtual network and the network address within the header is a next-hop address inserted into the header by a sending host.

10. (Original) The system according to Claim 8, wherein the virtual network is defined by a plurality of logical partitions within a single computing device.

11. (Previously Presented) A system for transferring data in a virtual network, comprising:
means for allocating one or more outbound packing buffers for each of a plurality of first network addresses, wherein each outbound packing buffer is logically divided into a plurality of frames, the frames being associated with second network addresses;

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means for packing outbound data packets into selected frames of selected ones of the outbound packing buffers, when a header of the outbound data packet to be packed specifies the first network address and the second network address which correspond to the selected outbound packing buffer and the selected frame; and

means for transmitting each outbound packing buffer onto the virtual network in a single transmission operation.

12. (Original) The system according to Claim 11, wherein the first network address comprises a next-hop address on the virtual network and the second network address comprises a final destination address.

13. (Original) The system according to Claim 11, further comprising:
means for receiving a set of frames from the transmission; and
means for determining whether to forward the outbound data packets which are packed in each frame by inspecting a first packet of the frame.

14. (Previously Presented) A computer program product for transferring data in a virtual network, the computer program product embodied on one or more computer readable media and comprising:

computer readable program code that is configured to allocate one or more outbound packing buffers for each of a plurality of particular network addresses;

computer readable program code that is configured to pack outbound data packets into appropriate ones of the outbound packing buffers, according to a network address within a header of each outbound data packet; and

computer readable program code that is configured to transmit each outbound packing buffer onto the virtual network in a single transmission operation.

15. (Original) The computer program product according to Claim 14, wherein each of the particular network addresses is a next-hop address on the virtual network and the network address within the header is a next-hop address inserted into the header by a sending host.

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16. (Original) The computer program product according to Claim 14, wherein the virtual network is defined by a plurality of logical partitions within a single computing device.

17. (Previously Presented) A computer program product for transferring data in a virtual network, the computer program product embodied on one or more computer readable media and comprising:

computer readable program code that is configured to allocate one or more outbound packing buffers for each of a plurality of first network addresses, wherein each outbound packing buffer is logically divided into a plurality of frames, the frames being associated with second network addresses;

computer readable program code that is configured to pack outbound data packets into selected frames of selected ones of the outbound packing buffers, when a header of the outbound data packet to be packed specifies the first network address and the second network address which correspond to the selected outbound packing buffer and the selected frame;
and

computer readable program code that is configured to transmit each outbound packing buffer onto the virtual network in a single transmission operation.

18. (Original) The computer program product according to Claim 17, wherein the first network address comprises a next-hop address on the virtual network and the second network address comprises a final destination address.

19. (Previously Presented) The computer program product according to Claim 17, further comprising:

computer readable program code that is configured to receive a set of frames from the transmission; and

computer readable program code that is configured to determine whether to forward the outbound data packets which are packed in each frame by inspecting a first packet of the frame.

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20. (Previously Presented) The method according to Claim 5, wherein the virtual network is defined by a plurality of logical partitions within a single computing device.

21. (Previously Presented) The system according to Claim 11, wherein the virtual network is defined by a plurality of logical partitions within a single computing device.

22. (Previously Presented) The computer program product according to Claim 17, wherein the virtual network is defined by a plurality of logical partitions within a single computing device.

23. (Previously Presented) A method according to Claim 1 wherein the virtual network is provided by a web hosting service or Internet Service Provider to end users.

24. (Previously Presented) A method according to Claim 5 wherein the virtual network is provided by a web hosting service or Internet Service Provider to end users.

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**APPENDIX B – EVIDENCE APPENDIX
(NONE)**

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APPENDIX C – RELATED PROCEEDINGS
(NONE)